

Summative Evaluation of



**at the
Science Museum of Minnesota**

**Report prepared by:
People, Places & Design Research**

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Science Buzz
at the Science Museum of Minnesota**

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August, 2008

Executive Summary

This summative evaluation of the *Science Buzz* project (former name: *Current Science*) provides a thorough analysis of how visitor audiences experience these exhibits, analyzed in relationship to the project's objectives. Ideally, the conclusions will facilitate the planning team's opportunity to reflect on the project's strengths and weaknesses, to consider some directions for their ongoing commitment to update and revise the exhibits, to apply any lessons here to future projects, and to contribute to general knowledge about the effectiveness of exhibitions that promote informal science education. Ultimately, the summative evaluation should help to solidify the learning experience for the entire planning team, and for others in the museum world.

Science Buzz is a museum-wide initiative to develop exhibits, programs, and a web site about timely current science topics and new scientific research. The institutional objective is for people to recognize SMM as a resource for finding out about recent developments in science and technology. The goals for these exhibits are to:

- ◆ have a distinctive identity which visitors associate with engaging, informative exhibits on current science, but are integrated within each gallery;
- ◆ attract and engage visitors in the content, objects and activities of current science (with low-cost components that can be easily modified and updated);
- ◆ inform visitors about current developments in science and technology;
- ◆ provide insights into how current science is relevant to people's lives;
- ◆ encourage visitors to share their perspectives and opinions about science issues in the news.

Science Buzz exhibits are spread throughout the museum, not in a single exhibition gallery, they cover a wide range of different topics, and they are changed each month. They share similar design features and a logo (red neon arrow). These factors presented challenges for a summative evaluation in terms of being able to identify to visitors the exhibits we wanted to ask about and in terms of analyzing visitors' recall of content. Therefore, the main research strategy (exit interviews) relied on photos of exhibits to help with the issue of identification. Also, it was decided to NOT change the exhibits under investigation during the data collection phases of the different evaluation methods, so content was held constant.

At the time of this evaluation, *Science Buzz* consisted of an Introductory Area consisting of several exhibits, plus 3-sided kiosks located in three galleries with information and activities related to the theme of that gallery (Health, Paleo Hall, Pompeii special exhibition), a Quiz Show, some exhibits smaller than a kiosk (called "Buzzettes," e.g., about Sound, Phenology, Biofuels), and numerous stanchions with text about recent developments relevant to nearby exhibits. Additionally, a website was developed which is accessible through the SMM homepage and also inside the museum via computers installed in some of the Buzz exhibits (Intro Area, Kiosks).

Research methods

This summative evaluation used a multi-method approach to investigate visitors' use and perceptions of *Science Buzz*, including these parts of the research strategy:

Method 1: *Exit interviews* were conducted with 446 visitor groups leaving the galleries. Two different interview forms (and photoboards) were used in order to maximize the number of questions and issues we could address.¹ The purpose of this strategy was to explore visitors' overall recall and perceptions of the Science Buzz exhibits – in terms of identity, enjoyment, and perceptions of interpretive messages (e.g., current science, relevance to everyday life).

Method 2: *Intro Area observations and interviews* were conducted with 76 adults who stopped here for at least 10 seconds. In addition, the behavior of 1840 visitors passing by this area was recorded to see what proportion stopped here. The purpose of this strategy was to get systematic data about the exhibits in this area, to help the planning team in making decisions about possible revisions.

Method 3: – *Health Kiosk observations and interviews* were conducted with 61 adults who stopped here for at least 10 seconds. The purpose of this strategy was to obtain more in-depth information about use and perceptions of this exhibit.

Method 4: A *Website survey* was completed by 127 users. The purpose of this method was to find out more about who is using the Buzz website and what they think about it.

Summary of Findings

Many (not all) of this project's goals and questions raised by the exhibit team were addressed by the summative evaluation. In the following summaries, the question is stated first and then the findings are presented about visitors' experiences.

Does *Science Buzz* have a distinctive identity? *Somewhat recognizable; the graphic more so than the name* [however, this is a big challenge].

- Among people who DID stop at one or more Buzz exhibits (based on photos of eight specific Buzz exhibits, shown during an interview as people exited from the Museum), about *half recognized the name* “Science Buzz,” while *two-thirds recognized the logo* of the red neon arrow. Among these visitors, about 40% associated the name “Science Buzz” with exhibits about recent discoveries or hot topics in the news, but 7% thought of electricity and 6% thought of bees. Considering that these are separate exhibits in different locations and about various topics, this degree of identity seems fairly positive, with room for improvement. Of course it's not the same level of recognition as “Pompeii” or “Health & Human Body.”

¹ A sample of 250 visitors were contacted with Form A, which used photos of Buzz and non-Buzz exhibits for comparison purposes; and 196 visitors were interviewed with Form B, which focused only on Science Buzz exhibits.

Do Science Buzz exhibits attract users? *Overall: yes (some more, some less).*

- Overall, about two-thirds of the random sample of museum visitors (intercepted as they exited from the building) said they had stopped at one or more of the eight Buzz exhibits shown in photos during the interview. Aside from the computers and stanchions which are placed in multiple locations (and recalled by 47% and 39%, respectively), the Newscast is probably the most frequently used *single* Buzz exhibit (25%; same as “Driving the Barge”). The use of other Buzz exhibits ranges from 8% who saw and recalled Object of the Month, to 12% who did the Quiz Show, to 17% who saw Scientist on the Spot, to 18% who stopped at the Pompeii Kiosk.

Are Science Buzz exhibits enjoyable? *Mostly yes.*

- The Quiz Show was the highest rated Buzz exhibit (among the six that visitors were asked about), with 56% saying it was ‘great’ and 34% saying ‘good.’ Visitors liked that it was interactive, had interesting topics and “tested your knowledge.” Other Buzz exhibits had moderately positive ratings (ranging from 38% ‘great’ for Newscast to 21% ‘great’ for Pompeii Kiosk). Some people (24%) rated the Newscast as ‘just okay’ because “it was just kids on TV, not very science based” or “there was too much reading for younger kids.”

Is Science Buzz perceived as being about current issues? *Yes, it’s a main theme.*

- Top-of-mind, visitors leaving the museum said Science Buzz was about current events in the news (40%; #1 answer)². Referring to the Intro Area, ‘current events’ was the second most frequent theme mentioned by visitors (22%).
- When visitors were shown a list of potential themes for Science Buzz, 48% selected ‘see what scientists are doing now’ (#2 answer). Also, 80% of visitors thought ‘research that is recent’ described the Intro Area (“definitely” or “somewhat”) and 79% said it described the Health Kiosk.
- When visitors were asked, “how recent is the information,” 69% thought the informational content of the Intro Area was recent, within the past year. However, only 35% thought the information at the Health Kiosk (about mosquitoes, malaria) was recent.
- There has been an increase in visitors’ perceptions of the Science Museum of Minnesota as ‘addressing current or recent developments’ since the Concept Planning Study (27% then vs. 57% now). Science Buzz has contributed somewhat to this perception, although other exhibits (health, temporary exhibits, weather) were more frequently cited as something “current.”

² 32% said current events and discoveries plus 12% said hot topics that people are talking about, equaling 40% if both categories are combined.

Is *Science Buzz* perceived as relevant to everyday life? Overall, it's a main theme.

- 'Science in everyday life' was the top theme chosen to describe Science Buzz from a list of eight potential descriptors (61%). Also, the Health Kiosk was seen as 'relevant to my life' by 47% (mosquitoes more so than malaria). However, only 16% thought the Intro Area was relevant (this perception may vary with the topics being presented at the time; in this case it was Pompeii, snow goggles).

Do visitors get the idea of 'talking about science?' Do they share their opinions?

It's a secondary theme, some people do participate.

- Overall, "talking about science" was the third most frequently mentioned theme top-of-mind (12%). It was also chosen by some people (30%) from a list of themes, along with 'asking questions about science' (32%). Referring to the Intro Area, 'talking about science' was the number one theme from a list (29% mentioned it). The activities here are: asking a question at Scientist on the Spot, doing the Opinion Poll, writing your own label for Object of the Month, and pretending to be a Newscaster.
- Among people who used the computers in the Intro Area, 23% wrote in a question or comment. At the Polling Station – something designed explicitly for giving opinions – 67% of those who stopped entered their opinion.

Summary of Specific Features**The Intro Area:**

This area gets some use (especially the TV Newscast), but it's not the *first* stop for the vast majority of visitors entering the Museum. After Newscast, the most used exhibits in this area are the Object of the Month and Computers. Few people were observed to have looked at the News Reader. On average, visitors spend less than two minutes in the Intro Area. Most agree it is 'fun for all ages' while some think there is 'too much reading' (especially Scientist on the Spot). At least half of the adults who stop in this area seem to "get the point" – expressed in their own words, they said it's about 'communicating about science' and 'current events.' Specific topics and content were less salient to visitors. There is evidence that the Object of the Month (from collections) detracts from visitors' perceptions of seeing information that is recent, supporting the proposal of moving this exhibit to Collections.

Health Kiosk:

Almost all visitors (88%) who stopped at this kiosk were drawn to the microscope activity. Only 13% stopped at more than one side of the kiosk. Most groups spent more than two minutes here which indicates that the activity was engaging. Two-thirds of kiosk users agreed that this exhibit shows 'research that is recent or happening now,' and half thought the topic was relevant to their lives.

Computers

Since the computers (linking to the website) are a part of many Science Buzz exhibits (Intro/registration, Poll, Scientist on the Spot, Kiosks in exhibit galleries) it seemed important to look at how they are being used at the museum. Overall, nearly half of the visitors interviewed leaving the museum said they had seen these computers at some point during their visit. Families with children are using them more than adults.

People who stop in the Intro Area are using the computers (47% of families, 33% of adult-only groups). Among the 32 adults in the observational study who did stop at the computers, they spent less than a half-a-minute at the computers (median=25 seconds). Some (40%) of the adults did not sit down and use the computers (they stood by, or watched someone else), but more than half (60%) who stopped did do something (including: 47% read someone else's comment; 23% wrote a comment; 17% registered themselves [half of whom did nothing else]). Few adults (8%) rated these computer activities highly, and few adults (7%) expressed high interest in checking out the website after they go home. Some adults (23%) realized it was a website before the interviewer told them. Some adults (30%) said the computer was 'a little confusing' to use; others thought it was straightforward.

Among those who used the computer at the Malaria Kiosk, most were families with children. About half of a small-sample study of users (n=25) explored beyond the first page, and 10 of the 25 used the photo-taking / e-mailing feature (probably contributing to the longer time spent--over three minutes, on average--compared to Intro Area computers). However, people who used the computer to take and send photos were unlikely to get any interpretive messages or information from this exhibit. Only 8% realized it was a website.

Website Survey:

The Science Buzz website has an audience of thousands of users each month. Unfortunately, the rate of participation in the survey was very low so it isn't possible to determine if the sample of 127 respondents was representative of the actual audience. About one-half said this was their first time on the Buzz website, while one-quarter have used it four or more times. About one-third of the sample has visited SMM (these people were more likely to be the repeat website users). Most users (75%) live outside of Minnesota. The website users are primarily children (21%), teens (19%) and young adults (23% aged 18-30). Their reasons for using the website included, "science is my favorite subject," "I wanted to read about the Woolly Mammoth tusks," "It's cool!" and "I like learning about new things." Most users had no complaints, but some offered suggestions such as, "the graphics are a bit too cartoony and I was initially turned off as they seemed very kid-oriented," "post the latest space news within days of discovery," "more educational games," and "videos."

How to read and interpret the data tables in this report:

In visitor studies such as this one, there are two primary types of data: quantitative and qualitative. Tables representing both types are presented in this report, but each is interpreted somewhat differently.

Quantitative data (usually: numbers)

As a general rule, percentages are computed based on column headings (shown above the data); percentages *cannot also* be read across a row. For example, in the following table it should be obvious that the first column of percentages refers to the heading “Overall Sample,” and the figures add to 100%. However, confusion sometimes arises when reading data from multiple columns. For example, the 63% in the third column should be read as: “63% of college graduates believe the museum definitely addresses current science.”

To what extent does the museum address current or recent developments in science?
 (EXIT, form A; no mention of Science Buzz yet in interview)

	Overall Sample	Level of Education	
		HS/some College	College Grad +
definitely	57%	44%	** 63%
somewhat	34%	41%	29%
not really, don't know	9%	14%	8%

Asterisks (**) indicate statistically significant differences between sets of figures. This example shows a comparison between two levels of education: people without a college degree and people with at least a college degree. The interpretation is: “visitors with college degrees were more likely to say that the museum ‘definitely’ addresses current science, compared to visitors without college degrees.” Statistical significance tests refer to an overall pattern of differences, not just to one or two numbers (although we may **bold** one number upon which the interpretation is focused). Plus signs (++) are used in this report to indicate patterns of differences which are not quite statistically significant (milder differences, which may have occurred by chance), but which suggest a trend and may have some intuitive value in some circumstances.

How to read and interpret the data tables (continued)Qualitative data (usually: comments from open-ended questions)

These results are interpreted somewhat differently than tables of quantitative data. The rank order of visitors' comments is more important than the specific numbers because visitors could have mentioned anything that they thought of on the spot and therefore the possible choices are numerous. Sometimes the results show one or more "top answers" that are mentioned much more frequently than other things, and sometimes there are no answers that clearly stand out.

What have you seen here that's current?

20%	health & human body exhibits (in general)
12%	Pompeii, Race, Body Worlds (special temporary exhibits)
12%	weather exhibits
8%	stem cell research
6%	mentioned a Science Buzz exhibit
6%	cell lab, genetics, DNA
6%	OMNI movies
6%	volcanoes, cited something specific from Pompeii
5%	Science on a Sphere, global warming
4%	ecology, Mississippi River gallery
4%	Big Backyard
3%	dinosaurs
2%	math, calculus
2%	experiments, e.g., tornado
1%	liquid nitrogen demonstration
1%	Optical Illusion Theater
1%	Mars Rover
6%	other
15%	blank, don't know

(adds to more than 100% because some visitors gave more than one answer)

A. Recognizing Science Buzz Exhibits

The first step in evaluating this exhibit program that has various components spread throughout the entire museum was to find out if visitors recalled seeing these exhibits, and if they recognized the logo that identifies these components as related. The key findings are:

- Without any visual cues, 38% of visitors leaving the museum thought they had seen any “Science Buzz” exhibits.
- When shown a picture of the logo, 56% of visitors recalled seeing Science Buzz exhibits. So, visual recognition is higher than name recognition alone (as would be the case for many things).
- When visitors were shown photos of eight specific Science Buzz exhibits, 63% of visitors recalled stopping at one or more of them. This level of exposure is similar to the proportion who saw exhibits in each of four galleries (ranging from 58% in Experiment Gallery to 74% in Health).

A. Recognizing Science Buzz Exhibits

OVERVIEW: Recognition of the name “Science Buzz” is weaker than recognition of other exhibitions, although some people were aware of it. Visitors leaving the museum were asked, verbally, if they had seen various exhibitions including “Science Buzz.” Most people had seen the main galleries and the Pompeii special exhibition, but only 38% thought they had seen “Science Buzz”. When asked to recall which Science Buzz exhibit they had seen, two-thirds of those either couldn’t give an example or mentioned other exhibits that are not part of Science Buzz (data presented on the next page). The Science Buzz exhibits that were named by a few people are: Newscast, Pompeii Kiosk, Quiz Show, Sound Waves, and the Polar Bear Stanchion.

Recognition increased to 56% when visitors were shown a photo of the “Science Buzz” logo that appears on all of the exhibits. Next, people were shown photos of eight specific Science Buzz exhibits and 63% recalled stopping at one or more of these (so actual exposure is at a similar level to other exhibition galleries). Families with children were more likely than adult-only groups to have stopped at a Science Buzz exhibit. There were no statistically significant differences between first-time and repeat visitors.

AMONG visitors who saw exhibits besides Pompeii				
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<i>Today, did you see . . . ?</i> (no visual cues)	<u>Overall</u> (n=196)	<u>Families</u> (n=101)	<u>Adults</u> (n=94)	<u>If Saw Buzz</u> ³ (n=123)
Health & Human Body	74%	74%	73%	
Pompeii exhibition	68%	55%	** 81%	
Mississippi River Gallery	62%	67%	57%	
Experiment Gallery	58%	72%	** 44%	
any Science Buzz exhibits (“not sure” about Buzz)	38% (12%)	43% (15%)	33% (10%)	49% (10%)
Stopped at any Buzz exhibits (photo of LOGO)				
yes	56% ⁴	56%	56%	68%
no	44%	44%	44%	
Saw ANY of 8 Buzz exhibits (shown PHOTOS)				
saw at least one	63%	72%	** 54%	100%
didn’t see any	37%	28%	46%	

** Asterisks indicate statistically significant differences (p<.05) between sets of figures. On this page there are some differences between family groups with children and adult-only groups.

³ Based on seeing one or more of the eight selected Buzz exhibits shown on the photo board.

⁴ This is similar to the 62% who recognized the Science Buzz logo in the SMM Buzz Branding Study (2005).

Which Science Buzz exhibit do you recall?

(38% said they saw any in first question; some mentioned more than one exhibit)

5%	newscast
3%	quiz show
3%	sound waves, activity with cups and rubber bands
3%	Pompeii, volcanoes
2%	polar bear sign
1%	malaria, mosquitoes
1%	gladiators
1%	other Buzz exhibits (camera, object)
12%	unclear, exhibits that are probably NOT Buzz exhibits
14%	can't recall, not sure

Answers by category

NEWSCAST

Newscast
Newscast
Newscast,
News
News one
Newscast
Newscast
TV
TV

QUIZ SHOW

Game Show
Quiz on birds and seasons.
Quiz show
The one where you play the game
The quiz show
Game show

SOUND WAVES

Sound
Sound ones, waves
Sound
Music
Voice Box
Wave thing, sound waves
Cups with rubber bands

POMPEII, VOLCANO

Mt. St. Helens

Pompeii

Volcano

Pompeii

Pompeii

MT. St. Helens

POLAR BEAR STANCHION

Bear

Polar Bears

Polar bear?

The polar bear

MALARIA KIOSK

Malaria

Microscope

Malaria

OTHER/ UNCLEAR / MAYBE NOT BUZZ

A bunch

Cell

Fossils

Blood pressure, lice, bones

Cell Lab

Neat river, dinosaurs

The dinosaur one

Penny

Green Room, lights and shadows.

Light

Light, weather, more too.

Lights

Lights

A few of the science experiments, magnets

Magnets and stuff

Perception

Some weather/storm things

Stem Cells

The medical one, body one

Robot

Weather

B. Use of Science Buzz Exhibits

The proportion of exiting visitors who recalled stopping at selected Science Buzz exhibits was explored using photoboards. The results are:

- The most used Buzz exhibits are the Computers (on kiosks in multiple locations) and the Newscast (25% stopped here, same usage as “Driving the Barge,” a popular non-Buzz interactive exhibit).
- Other Buzz exhibits (Phones, Stanchions, Scientist on the Spot, Pompeii Kiosk, Malaria Kiosk, and Quiz Show) were seen by approximately 15-20% of visitor groups.
- Families with children were significantly more likely than adult-only groups to stop at several of the interactive Buzz exhibits: Computers, Newscast, Quiz Show, and Malaria kiosk.

B. Use of Science Buzz Exhibits

OVERVIEW: The most widely *recognized* Buzz exhibits are the components that appear in multiple locations, e.g., the computers (47% saw them), the phones (45%), and the stanchions (39%). However, actual participation may be lower, e.g., 21% picked up a phone to listen to a scientist and 20% stopped to read a stanchion. The Newscast is probably the most highly used single Buzz exhibit, with one-quarter of visitors groups saying they had stopped there. This level of use is similar to other comparable (non-Buzz) interactive exhibits in the museum, such as Driving the Barge and Body Hotel, although lower than Blood Volume (34%). Other single Buzz exhibits are less used (ranging from 8% who saw the Object of the Month to 18% who saw the Pompeii Kiosk).

Did you SEE these? (photo board with **Buzz** exhibits) (EXIT INTERVIEWS, form B)

	<u>Overall</u> (n=196)	<u>Families</u> (n=101)		<u>Adults</u> (n=94)
multiple locations				
Computers	47%	56%	**	36%
(anyone enter info / get a username?)	16%	25%	**	7%
Phones	45%	50%		39%
(anyone listen to scientist on phone?)	21%	34%	**	9%
Stanchions	39%	40%		38%
(anyone read the signs?)	20%	21%		19%
Scientist on the Spot	17%	21%		13%
only one location				
Newscast	26%	36%	**	15%
Pompeii Kiosk	18%	14%		21%
Quiz Show	14%	23%	**	4%
Object of the Month	8%	11%		4%
stopped at <u>any</u> of these 8 Buzz exhibits	63%	72%	**	54%

Did you STOP here today? (photo board with **Buzz** and other interactive exhibits) (EXIT INTERVIEWS, form A)

	<u>Overall</u> (n=250)	<u>Families</u> (n=150)		<u>Adults</u> (n=94)
Blood Volume	34%	37%		30%
Newscast	25%	33%	**	12%
Barge	25%	33%	**	12%
Body Hotel	20%	28%	**	7%
Harmonograph	18%	27%	**	4%
Malaria Microscope	14%	21%	**	4%
Quiz Show	12%	19%	**	2%
Sound	9%	13%		2%
stopped at <u>any</u> of these 4 Buzz exhibits	42%	57%	**	18%

C. Appeal of Science Buzz

This section of the report presents visitors' ratings of selected Science Buzz exhibits, as well as what they liked and didn't like about them. The key findings are:

- People enjoyed the Quiz Show most (56% rated it 'great'). Visitors liked it because it's interactive, fun, has interesting topics, and tests your knowledge.
- The Newscast was moderately rated (38% said it was 'great'). People liked it because it was fun for the kids and they could see themselves on TV. Some of the disappointments about this exhibit were that it wasn't appropriate for young children because it requires reading and that it didn't seem scientific enough because it was "just kids on TV."
- The Kiosks (Pompeii, Malaria) got somewhat lower ratings (21-28% 'great'). People liked seeing mosquitoes up close under the microscope and liked learning about mosquitoes at the Malaria Kiosk (except for a few women who gave low ratings because they don't like bugs).

C.1. Ratings of various Buzz exhibits

OVERVIEW: The Quiz Show was the most highly rated Buzz exhibit, with 56% saying it was ‘great’ (similar to the Harmonograph, lower ratings than Driving the Barge). The Newscast was rated highly by 38% of visitors, while the Kiosks were somewhat lower (28% for the interactive microscope at the Malaria Kiosk and 21% for the Pompeii Kiosk, which didn’t have an interactive activity at the time of the study). Note that the ratings for Quiz Show and Newscast were quite consistent across the two methods (Exit Form A and Exit Form B: Quiz Show: 57% and 55%; Newscast: 41% and 34%).

Give your opinion about each of these activities:

(EXIT, form A: photo board with **Buzz** and other interactives)

(overall n=250)

<u>%’s based on people who stopped:</u>		<u>Great</u>	<u>Good</u>	<u>Okay</u>	<u>Didn’t like</u>
(n=62)	Barge	73%	16%	10%	2%
(n=30)	Quiz Show	57%	37%	3%	3%
(n=46)	Harmonograph	56%	35%	13%	2%
(n=61)	Newscast	41%	34%	23%	2%
(n=84)	Blood Volume	40%	40%	17%	2%
(n=50)	Body Hotel	32%	38%	28%	2%
(n=36)	Malaria Microscope	28%	53%	17%	3%
(n=21)	Sound	not enough people stopped for reliable analysis			

Give your opinion about each of these activities:

(EXIT, form B: photo board with **Buzz** exhibits only)

(overall n=196)

<u>%’s based on people who stopped:</u>		<u>Great</u>	<u>Good</u>	<u>Okay</u>	<u>Didn’t like</u>
(n=27)	Quiz Show	55%	30%	15%	0
(n=50)	Newscast	34%	44%	20%	2%
(n=34)	Pompeii Kiosk	21%	53%	26%	0
(n=15)	Object of the Month	not enough people stopped for reliable analysis			

C.2. What did visitors like about the exhibits?**NEWSCAST**

OVERVIEW: Visitors liked the Newscast because the children had fun and it was neat to see yourself on TV.

What did you like about that one? (EXIT, form A: n=40)

55%	kids enjoyed it, interactive, fun
30%	seeing ourselves on TV
12%	finding out how a real TV newscast works
8%	reading the prompter
5%	blank, don't know

Sample of comments

People enjoyed themselves, kids like it

Kids liked Newscast

My son liked seeing himself on TV

Interactive for the kids

Seeing ourselves on TV, reading the monitor

It was fun, interactive for the kids

It made us laugh, we hammed it up

Kids were having fun

Seeing each other on TV

The reality of it, how it works

Part of real life

Funny, liked that the kids had to read

Gave information in a fun way

It was fun, we like to perform

The part where you get to be on TV and do a newscast

Interactive and funny

Kids felt like they were on TV

Interesting to figure out how news casting works, rolling script

Saw the kids on there

What did visitors like about the exhibits? (continued)**QUIZ SHOW**

OVERVIEW: People liked the Quiz Show because it's interactive and fun, the topics are interesting, and it tests your knowledge.

What did you like about that one? (EXIT, form A: n=21)

12	interactive, fun
6	interesting topics, information
5	learning, testing your knowledge
3	competing with others
2	group activity

ALL comments

Taught me things about baseball that I didn't know

Fun, interesting for my son

Being interactive, more than one person at a time

It was fun, we competed against each other

Having a lot of fun

It tests your knowledge of what you've seen so far and it's a group activity

Interactive

Interactive, fun for the kids

Little bit of competition, added something

Fun, I like answering trivia questions

Something to think about

Made you remember what you learned, see if you were paying attention, had us compete against each other

The questions about the volcano

Funny and informative

Fun to figure out answers

Interactive

Questions relate to our area

Informational, fun, offers reading opportunities in a fun format, interactive, the children compared what they got right and wrong

It was just interesting, fun to play, tested knowledge

Very interesting

Pompeii information

SOUND

What did visitors like about it? (continued)

OVERVIEW: The Sound activity was described as “easy to understand,” and it was interesting to “see the patterns in the sound.”

What did you like about that one? (EXIT, form A: n=15)

8	easy to understand, well-explained
5	seeing and making different sounds
4	interactive, fun
2	interesting

ALL comments

It explains sound and shows what I am trying to explain

Interactive, nice job of explaining itself

Turns on and you can do experiments, the sound that it makes

Showed and told visual and literal representation

Interesting I guess

Nice, appeals to different ages, my kids liked seeing the patterns in sound and I can read about it and tell them

We can quickly explain what's happening

It showed you the flexibility that you have with sound

Kids interacted with it, they could understand how to do it

Interesting and fun

Good demonstration of how sound gets created

She can interact, she can understand

Fun how sound was made

Just interesting

With the cups, kids like making different noises

What did visitors like about it? (continued)**MOSQUITOES**

OVERVIEW: Visitors liked seeing the mosquitoes “up close” using the microscope at the Malaria Kiosk. Some people read the flip cards and thought it was interesting to learn about mosquitoes.

What did you like about that one? (EXIT, form A: n=26)

17	seeing bugs up close
9	reading about it, learning about mosquitoes
2	well designed, easy to understand

ALL comments

Show the close-ups, pictures of mosquitoes
Actually got to see the bug and how it bites me
My son likes mosquitoes and bugs
Flip cards you could read
Learned a lot about something I didn't know, talked about where mosquitoes are
That you could see so close
Worked very well, seemed very nice, neat well designed contraption
Guide to read, to understand better
Liked looking at the mosquito parts up close.
Seeing them up close.
Cool to look at even though mosquitoes make me mad.
Zoom in on things, read the information.
My kids saw it.
You can see things up close.
Just getting up close and personal with what I'm swatting.
They have all of it there, it was easy to see everything - the larvae, easy for kids to understand.
Interesting to see the progression from larvae
Different parts of mosquitoes could be seen; really interesting.
It was fun to look at, the microscope
It was informative.
To be able to see things up close with the microscopes.
Got to see up close.
Close up and see things that you pass by. Multiple magnifications.
Up close
The information that you get.
Informative - all talk about West Nile virus. It makes me less worried.

C.3. What did visitors dislike about the exhibits?

Why was that exhibit less interesting to you? (follow-up if they rated it 'ok' or 'didn't like')
(EXIT, form A)

NEWSCAST: Negative comments about this exhibit included: it didn't seem scientific (to just see yourself on TV), and it wasn't appropriate for preschoolers (because of the reading).

It was just ok

Just shows how TV works, not very science based

Seemed kind of silly to me

It was just kids on TV

Not that informative, kind of "there"

One is like science, but this is just technology

You sat down and read, not very interesting

One of the least animated things here

Not age appropriate for a 3 year old

Over the age limit for our kids

We weren't successful at it

Too busy

SOUND:

Didn't hold the kid's attention

Didn't spend a lot of time there

QUIZ SHOW:

Hadn't seen Pompeii and all the questions were about Pompeii

MOSQUITOES: A few visitors (women) didn't like looking at bugs.

Would have liked it more if more interactivity

Couldn't find the mosquito, hard to maneuver

I'm not into bugs

I don't like bugs

D. Perceptions of interpretive messages

Several techniques were used to assess visitors' perceptions of interpretive messages, including open-ended questions and selecting ideas from a list. The key findings are:

- The top answer to an open-ended question, “what is Science Buzz about?” was *current science events*. The logo and title “Buzz” helped communicate this idea to people regardless of whether they recalled stopping at a specific Buzz exhibit.
- The top two ideas chosen to describe Science Buzz (from a list of eight) were: ‘science in everyday life’ and ‘see what scientists are doing now.’ These messages both correspond with the goals for Science Buzz.
- Many visitors (57%) feel that the museum ‘definitely’ addresses current developments in science, contrasted with 27% who thought this several years ago (Concept Planning Study, 2004). Health and Human Body exhibits (stem cells, cell lab, and in general) contributed the most to this perception of seeing current science, but specific Science Buzz exhibits were also mentioned by some people.

D.1. Overall impressions of messages

OVERVIEW: After seeing the photo of the Science Buzz logo, about one-third of the visitors guessed that this exhibition is about current issues or new discoveries (clearly the top answer and similar proportion among people who recalled stopping at a Science Buzz exhibit and among those who didn't). The second impression among people who didn't recall stopping at a Science Buzz exhibit was that it's about bees.

Whether you saw it or not, what do you think an exhibit called Science Buzz would be about? (after seeing LOGO)

<u>Saw</u> (n=118)	<u>Didn't</u> (n=112)	
32%	30%	current issues, discoveries in the news
12%	8%	science trivia, fun facts, quiz
12%	7%	hot topics that everyone is talking about
7%	5%	electricity
6%	15%	bees, insects
4%	8%	demonstrations, experiments, for kids
4%	2%	excitement
3%	5%	educational
1%	4%	hearing, noises, music
1%	2%	real life, everyday science
25%	17%	other, general (e.g., info about science)
4%	8%	don't know, blank

Sample of CURRENT / HOT TOPICS answers

AMONG THOSE WHO RECOGNIZED LOGO / SAW SCIENCE BUZZ EXHIBITS

Current - what's discovered and talked about

Hot topics.

Contemporary science issues

Current science events

Current topics, of interest right now.

Information, current - what's happening

Latest in the news.

Latest science technology.

Latest scientific information on a topic.

New stuff

Something that's new and talked about

Science in the news

Talking about science. All the latest news

Science recently in the news.

What's happening in the world of science right now

What's new in science

AMONG THOSE WHO DID NOT RECALL SEEING SCIENCE BUZZ EXHIBITS

New, hot topics.

Science projects. What's new, maybe?

New and exciting things in science. Buzz words in science.

It's something that people are talking about

Buzz, what's new.

Current issues in science

Current, new discoveries in science

I have no idea, what's going on today.

Info, about the topic, what's hot, what's current in science.

What people are saying about science

Science of today.

Something that's new - like a hot topic. Maybe it's recent or something in the news.

The buzz that's in the news

The latest happenings in science.

Things that are more relevant, new discoveries.

Up to date information.

Sample of OTHER / GENERAL answersAMONG THOSE WHO RECOGNIZED LOGO / SAW SCIENCE BUZZ EXHIBITS

How things work.

All different types of science.

Biology, astronomy, weather

Far reaching from biology to space exploration

Highlighted exhibit or point.

Information on science.

Interesting, you need to know.

Light

Media on marketing

Physics

Science Information

Science, topics of interest

The main points

Things that might be interesting or you might want to know.

To get you to go to different locations around the museum.

AMONG THOSE WHO DID NOT RECALL SEEING SCIENCE BUZZ EXHIBITS

A lot of info about science

For younger kids, information.

Gives you a little bit of scientific knowledge

Info about science

Mechanics, gravity, physics

Science exhibit.

Something you never heard of

I don't know. Science topics?

Weather, anything to do with science, rocks.

Overall impressions of messages (continued)

OVERVIEW: People who actually stopped at one or more of the eight Science Buzz exhibits (shown in photos) were given a list of possible themes to describe these exhibits. Their top two choices were ‘science in everyday life’ and ‘see what scientists are doing now.’ However, the idea that ‘information is updated frequently’ was one of the least selected.⁵

Which of these phrases best describe the Science Buzz exhibits? (pick 2 or 3)
(among those who actually saw one or more of the 8 exhibits in photos)

science in everyday life	61%
see what scientists are doing now	48%
asking questions about science	32%
people talking about science	30%
science in the news	29%
well-established facts	17%
information that is updated frequently	15%
local issues	10%

⁵ These results parallel a previous study (SMM Branding, 2005) where ‘frequently updated information’ was near the bottom of the list of 9 descriptors. Also, the top two choices are the same.

D.2. Content recalled from specific exhibits

OVERVIEW: Most visitors could not recall any specific content from the Science Buzz exhibits they had seen by the time they were leaving the museum.

What do you recall from SCIENTIST ON THE SPOT?

(n=36)

8%	it was about gladiators
3%	it was about racism
6%	just recall the picture of a scientist
17%	I didn't stop to read it
61%	blank, don't know

Substantive answers:

Talking about whether gladiators were wealthy or not, or left-handed

What was the topic of the NEWSCAST?

(n=54)

9%	pigs, mammoths, octopus, grasshopper
7%	bears
4%	weather
6%	other
19%	just watched others, didn't do it
61%	blank, don't know

Substantive answers

Male and female mammoth

Astronomer looking through a telescope

Giant grasshopper

Something weird about an animal?

Smokey the Bear

Gas

Dying bears

A ranger and professor

Grizzly bears

Painting bears, Brittany Spears

Precipitation

What was the most interesting fact you saw on the QUIZ SHOW?

(n=32)

9%	Pompeii
3%	baseball
3%	weather
3%	other
81%	blank, don't recall

Substantive answers:

Pompeii and how it got frozen

If you're standing and the wind is to your back there's a high pressure system to your right

Explanation might help if you get it wrong – it doesn't seem to give you an answer

The curve ball goes the farthest

Pompeii and how they got buried

How did this activity [POMPEII KIOSK] add to the Pompeii exhibit?

(n=39)

26%	added interest, different perspective
10%	current relevance
10%	good for kids
5%	other
56%	blank, don't know

Substantive answers

Made it contemporary

The exhibit is about the past, this brought it to present day

Current relevance – Mt. St. Helens

Interesting comparison

Added more visual examples, made it more understandable

Very interesting

Mt. St. Helens, kids liked the computer

Really good for the kids, makes history more interesting

D.3. Current science

OVERVIEW: Museum visitors expressed moderate interest in ‘seeing science that’s recent or in the news’ and also in ‘basic well-established science’ (~40% gave ratings of ‘9’ or ‘10’). People with science-related careers expressed the highest interest in recent science. In the Concept Planning Study for “Current Science” 54% of SMM visitors had ‘high’ interest in seeing recent science.

On a scale from 1 to 10, how would you rate your interest in seeing . . .
(FORM A+B)

	High (9-10)	Medium (7-8)	Low (1-6)
science that’s recent or in the news	42%	45%	13%
basic, well-established science	38%	38%	24%

Who has high interest in seeing RECENT science?

- ** 50% among people with science-related careers
- 41% of people with some training in science
- 41% of people with interest but no training
- 23% of people with no interest in science

- ++ 46% of women
- 35% of men

No significant differences among audience segments on interest in BASIC science.

Perceptions of current science (continued)

OVERVIEW: More than half of the visitors feel that the museum ‘definitely’ addresses current developments in science.⁶ Asked to give examples of something they had seen here that’s current, 6% mentioned a Science Buzz exhibit. The top answers were health exhibits (especially stem cell research), weather exhibits, and temporary exhibits such as Pompeii.

To what extent does the museum address current or recent developments in science?
(EXIT, form A; no mention of Science Buzz yet in interview)

	Overall Sample	Level of Education	
		HS/some College	College Grad +
definitely	57%	44%	** 63%
somewhat	34%	41%	29%
not really, don’t know	9%	14%	8%

What have you seen here that’s current? (if they said ‘definitely’ or ‘somewhat’)

- 20% health & human body exhibits (in general)
- 12% Pompeii, Race, Body Worlds (special temporary exhibits)
- 12% weather exhibits
- 8% stem cell research
- 6% mentioned a Science Buzz exhibit**
- 6% cell lab, genetics, DNA
- 6% OMNI movies
- 6% volcanoes, cited something specific from Pompeii
- 5% Science on a Sphere, global warming
- 4% ecology, Mississippi River gallery
- 4% Big Backyard
- 3% dinosaurs
- 2% math, calculus
- 2% experiments, e.g., tornado
- 1% liquid nitrogen demonstration
- 1% Optical Illusion Theater
- 1% Mars Rover
- 6% other
- 15% blank, don’t know

“Science Buzz” answers

Alternative energy exhibits
Science Buzz updated science
Bio-fuels
Malaria
The TV show
Malaria

Game with nanotechnology
Different fuels, discovery
Scientists doing modern work: “comment on this”
Butterfly evolution
Bio-diesel
Nanos

⁶ In the Concept Planning Study (2004) only 27% thought the museum was providing recent information.

Sample of answers: *What have you seen here that's current?*

Human body exhibit, pollution, ecology
Human body exhibits
The globe thing (SOS), conservation
Stem cells, body works, building in the back
The weather, human body
Paleontology, high-def OMNI, Prairie Grass & Parks
Human body, perception theater
Climate change, volcanoes, floor map of the world
The stem cell research
Health-related and weather-related exhibits
Race exhibit
3D Mars Rover thing, Shark movie
Current archaeology at Pompeii
Volcano and earthquake exhibits
River development
The body part, dinosaurs
The watershed
Pompeii excavation and preservation
Body Worlds a year ago
Genetics
Cell lab, stem cell research
Race, Optical Illusion Theater, brain surgery
Blood pressure
Hydraulics, weather

'Other' category of answers

Telescopes
Sharks and endangered species
The toilet one
The level of interactivity of everything
Bathroom exhibits
Collections
Hmong House
Wave action, Tsunami, electronics
Seismograph, wave machine
Rainforest, Wild Rice Restoration
Hmong House
Too many to relate
Electricity and magnetism
Waves and tsunamis
Water
Waterfall
Hybrid Car
Walked thru water Lake Pepin
Robot

Perceptions of current science (continued)

OVERVIEW: People chose Science Buzz exhibits more often than other comparable exhibits as showing “current science.” Newscast, Quiz Show, and Blood Volume (not a Buzz exhibit) were the most frequently selected from the group of eight exhibit photos. Newscast is perceived as current because news is about current events. The Quiz Show was seen as current because there were questions about weather, which is perceived as current.

Which of these exhibits, if any, show recent or current science? (FORM A: photo board)
(% based on proportion that stopped there)

Newscast	39%
Blood Volume	35%
Quiz Show	32%
Mosquitoes	25%
Body Hotel	24%
Sound	23%
Barge	9%
Harmonograph	6%

Why?**NEWSCAST**

The news is prevalent in our lives

The news on the screen

It's everyday stuff

We all watch TV

Hogzilla story

The way it was done, the information in it

New technology, how TV works

On the news

Gas prices spike, energy issues

Because you could get news stories that are current

It's stuff that's happening all the time

Court cases and DNA

Because it helps if a kid “gets it” on TV, the program then encourages them to read

Technology, Science Buzz

TV is current

Because it is current

It's current news

Why is that recent science? (continued)

QUIZ SHOW

*Was about clouds and weather which are always recent
I'm sure they keep that one more updated
Current stuff, the questions were related to current issues
Clouds are always current
Tsunamis, weather
Stuff on there I didn't know
It had Pompeii information*

MOSQUITOES

*It's about mosquitoes, they're in the news
West Nile is in the news
People are worried about mosquitoes, it's up to date
West Nile
Because there has been West Nile virus
They're still around today
Infection, dense population, ecology, interaction of organisms*

SOUND

*It's the last 30 years or so
I don't know, the boys did a lot of it*

D.4. Connection to everyday life

OVERVIEW: People chose Science Buzz exhibits more often than other comparable exhibits as “connecting to everyday life.” Mosquitoes and Newscast were the most frequently selected. People see mosquitoes as connected to everyday life because there are lots of mosquitoes in Minnesota and because they carry diseases that can affect humans.

Which of these exhibits, if any, connect to everyday life? (FORM A: photo board)
(% based on proportion who stopped there)

Mosquitoes	50%
Newscast	46%
Body Hotel	43%
Quiz Show	42%
Sound	39%
Blood Volume	35%
Harmonograph	20%
Barge	14%

Why? MOSQUITOES

West Nile virus, disease

I'm a nurse, it always applies

They can bite me and carry disease

I'm a science teacher

We see mosquitoes all the time

We have woods and lots of mosquitoes in the summer

Touch us everyday

Because of uptake in West Nile and Malaria

Because we live in mosquito season – I'll show you my bites!

We're from Oklahoma, so yes

Mosquitoes are important to Minnesotans

I get bit by mosquitoes

You deal with that on an everyday basis

I live in MN

Because they don't spray for mosquitoes where we live, so there are lots of them

Relevant – malaria information

Diseases the mosquitoes carry and viruses

Why does that connect to everyday life? (continued)

Why? NEWSCAST

It showed everyday life

I was just explaining to him how radios work

Shows new things

News is on everyday

We all watch TV

Watch TV everyday

Gas prices

It's science news, what you do on a daily basis

Talked about lightening and what to do

Most people get their information from TV

Why? SOUND

You are always hearing, unless you are deaf, there's sound all around us, even if you are deaf you can feel the vibration

Sound is a huge part of everyday life

I like to listen to music

There's sound everywhere

Hearing, understanding perception

Why? QUIZ SHOW

Baseball fans

Lots of quiz shows on TV

E. Mini-Study: Use and perceptions of the Intro Area

In order to investigate use and perceptions, this study combined three methods: tracking 1840 visitors entering the Hall through the main door or via the stairs, timing and tracking of 128 adults (with and without children) who stopped at one or more exhibits in the Science Buzz Intro Area, and interviews with 76 adult visitors after leaving the Intro Area. Highlights of the results are:

- The proportion of visitors who stop in this area upon first entering through the main door is modest (12%). An additional 11% see these exhibits later in the visit (coming up the stairs). Additional people probably stop here after seeing exhibits in the Mississippi River Gallery or after seeing the Pompeii special exhibit (but they were not tracked so we don't know this figure). The point of these findings is that we know *at least* one-quarter of visitors are seeing exhibits in the Intro Area, but that they aren't necessarily stopping here *first* thing.
- The median amount of time spent in the Intro Area was 1 minute, 43 seconds (families with children spent longer, adults without kids spent less time). Most of this time is spent at the Newscast.
- Computer users primarily looked at the blogs or comments, although 17% said they registered as a buzz member and 23% wrote a comment (decent participation for this type of web activity). However, the majority of adults expressed low interest in checking out the Buzz website sometime after leaving the museum.
- The top two themes people mentioned when asked to describe what this exhibit area is about were "asking science questions" and "current events" – indicating that the intended interpretive messages are coming through. Also, two-thirds of visitors believed that the information was recent (within the past year).

E.1. Overall patterns of using the Intro Area

OVERVIEW: The vast majority of people entering the gallery from the main door or from the stairs did not stop at any exhibits in the Intro Area (although they may see it after seeing other exhibits on this floor, those people were not included in these observations). Among people who did stop here, the Newscast was the most frequently used, followed by the Computers and Object of the Month. People who enter the gallery from the main door tend to stop at the Newscast first. Visitors who come up the stairs are equally drawn to the Poll and the Newscast.

<u>Proportion who stopped here:</u> OBSERVATIONS/TRACKING	Entering Hall from:	
	<u>Main Door</u> (n=959)	<u>Stairs</u> (n=881)
passed by, didn't stop	88%	89%
stopped at Newscast only	5%	5%
stopped at anything besides newscast	7%	6%

TRACKING/TIMING	Entering Hall from:	
	<u>Main Door</u> (n=71)	<u>Stairs</u> (n=57)
(among those who stopped for at least 10 seconds at one or more exhibits, besides News) ⁷		
Newscast	58%	47%
Intro Panel	23%	23%
Scientist on the Spot	27%	30%
Object of the Month	40%	50%
Computers	42%	40%
Poll	21%	33%
Reader	6%	7%

<u>Exhibit stopped at FIRST:</u> (among those who stopped for at least 10 seconds at one or more exhibits, besides News)	Entering Hall from:	
	<u>Main Door</u>	<u>Stairs</u>
Newscast	50%	30%
Intro Panel	15%	7%
Scientist on the Spot	8%	3%
Object of the Month	8%	13%
Computers	10%	17%
Poll	4%	27%
Reader	2%	3%

⁷ Because of this sampling stipulation, these usage figures are not directly comparable to previous studies (with the exception of Newscast, which has a very similar level of use now compared to 47% previously). This study attempted to interview enough computer users to allow for more in-depth analysis, so the proportion of computer users (41%) is higher than the figures reported in previous studies, ranging from 9% in "Low-Carb Craze" (2004) to 25% in "Current Science Prototypes" (2002).

Patterns of use (continued)

OVERVIEW: Families with children were more likely to stop at the Newscast compared with adult-only groups. Adults were more likely to stop at the Poll.

Stopping by Group Type:

	<u>Families</u> (n=36)		<u>Adults</u> (n=24)
Newscast	64%	**	38%
Intro Panel	22%		25%
Scientist on the Spot	47%	++	25%
Object of the Month	42%		50%
Computers	47%		33%
Poll	17%	**	42%

Stopping by Gender:

	<u>Women</u> (n=38)		<u>Men</u> (n=22)
Newscast	50%		59%
Intro Panel	29%		14%
Scientist on the Spot	47%	++	23%
Object of the Month	42%		50%
Computers	45%		45%
Poll	21%		36%

Patterns of use (continued)

OVERVIEW: On average, visitors spent about 1¾ minutes in the Intro Area. Families with children spent longer than adult-only groups. People spent the most time at the Newscast (about 1 minute on average), followed by the Poll (median of 37 seconds). People spent the least amount of time at the Intro Panel (median of 13 seconds). There were not enough people who looked at the NewsReader to calculate an average time.

Time spent at exhibits

(among those who stopped)	<u>Median</u>	<u>under 1 Minute</u>	<u>1-under2 Minutes</u>	<u>2+ Minutes</u>
overall time spent in area	1 min. 43 sec	28%	24%	48%
Newscast Only	59 sec	51%	20%	29%
Newscast (if also saw others)	1 min. 4 sec	40%	37%	23%
Intro Panel	13 sec	100%	0	0
Scientist on the Spot	21 sec	89%	7%	4%
Object of the Month	28 sec	76%	12%	12%
Computers	25 sec	62%	22%	16%
Poll	37 sec	75%	20%	5%
Reader	not enough data to analyze reliably (n=5)			

Families spent an average of 2 minutes, 8 seconds (median)

Adults spent an average of 59 seconds (median)

Compared to the September 2004 SMM Timing & Tracking Study:

(Note that the previous study included children, and this one tracked adults.)

(Also, the Quiz Show component has now been re-located, and that probably contributed to a longer overall time in the previous study)

Overall time spent in area	2 min. 34 sec	(this is the figure for adults)
Newscast	1 min. 12 sec	
Panels	43 sec	
Computer/Website	56 sec	

E.2. Using the computers

OVERVIEW: Most adults who stopped at the computers were watching someone else (kids) do it – 39% sat down at the computer. The most frequent activities people did on the computer were reading the comments written by others (47%) and reading the blogs on various topics (40%). Almost one in five users (17%) registered as a Buzz member and 23% wrote a comment.⁸ Only 30% thought the computer was ‘very easy’ to use and 30% said it was a little confusing. These results are all quite consistent with findings from a previous study (SMM Website Usage Study). Among those who stopped at the Polling Station, two-thirds of the visitors said they had entered an opinion.

COMPUTER USERS (n=32)

sat down at computer	39%	
watched someone else	61%	
read comments	47%	(50% in previous Website Usage Study)
saw blogs on various topics	40%	
wrote a comment	23%	(19% in a previous Website Usage Study)
registered as a Buzz member	17%	

Was the computer easy to use?

very easy	30%
average	40%
a little confusing	30%

29% of visitors were observed to have had some difficulty in a previous SMM Website Usage Study.

POLL USERS (n=20)

sat down at poll	37%
watched someone else	63%
entered an opinion	67%

⁸ These participation figures are fairly consistent with data from a large study of internet users (Universal McCann, 2008; cited in www.editorsweblog.org/multimedia/2008/04/study_shows_that_us_and_western_europe_h.php) which found that 60% of internet users in the U.S read blogs and 26% create blogs. Both of these figures represent increases from a previous study (2006). Of course, use of social networking sites such as My Space and Face Book is not really the same as using the Science Buzz website during a museum visit, so it’s difficult to draw any conclusions about “success” from comparisons such as this. Active participation rates are not necessarily the only way to measure “success” of an internet community; “lurkers” may be getting something out of it and there are other factors that can be explored as well.

E.3. Perceptions of the computer activities (Buzz website)

OVERVIEW: Very few people rated the computer activities as ‘great’. Reading blogs, writing comments, and registering were mostly rated as ‘good’ or ‘ok’. Reading comments left by others was rated only ‘ok’ by most of the people who did this activity. About one-quarter of the people who used the computers in the Intro Area realized it was a website. Very few people expressed high interest in checking out the Buzz website after they get home – 76% said they had low interest in this. Reasons given for their low interest included: it wasn’t that appealing, they get enough information about science from other sources, or they aren’t that interested in science.

Ratings of things you did on the computer:

	<u>Great</u>	<u>Good</u>	<u>Ok</u>
seeing blogs on various topics	1	6	5
reading comments left by others	1	4	9
writing your own comment	1	3	3
registering as a Buzz member	0	2	3

Did you realize it is a website or did you think it was a program that’s only on these computers?

realized it’s a website	27%
didn’t realize	73%

Similar to the 2006 SMM Website Usage Study (20%).

How interested are you in checking out the Buzz website sometime after you go home?

	(n=30)
high interest (9-10)	7%
medium (7-8)	17%
low (1-6)	76%

This finding of low interest is different from the 2006 SMM study suggesting that 91% of visitors felt the website was ‘interesting’ or ‘extremely interesting’. (The differing results are probably due to different methods – cued vs. uncued interviews – and to different phrasing and response scales.)

Why does that interest you?

General science information

I like to know a bit of stuff on science

My daughter likes the topic

The list of options, I like science in general

I’m a school administrator, I want to see what

they’re talking about and what they have to offer our students – I’m going to do it today.

The kids would like it

Why did you give a lower rating?

20%	it wasn’t that interesting or appealing (compared to other sites)
17%	I get enough science information from other sources
13%	I’m not that interested in science outside the museum
7%	seems more for kids
17%	don’t know, no reason

E.4. Overall perceptions of the Intro Area

OVERVIEW: The top two themes mentioned when people were asked, “what is this exhibit area about?” involved communicating about science and current events. It is also interesting that most of the comments are about scientific process (questions, ideas) rather than about specific topics or content. However, when asked “what did you find out,” two-thirds of the visitors could spontaneously recall some kind of content (results presented on page after next).

What is this exhibit area called Science Buzz about?

29%	communicating about science, asking questions, giving opinions
22%	news, current events
11%	various science topics
9%	volcanoes, Pompeii
7%	interactive activity, for kids
5%	getting kids involved in science
3%	object of the month
4%	other
18%	don't know, blank

List of comments

Interactive sciences

Volcanoes

It looks like you can ask questions and participate in hands-on activities

It looked like on-line chat about pennies.

New things in science

Getting kids interested and involved in science; their feedback

It looked like current events stuff.

More interactive, getting people to give back based on what they learned.

It's showing students/people how science works by play acting the different roles of science

It's about the news and some object of the month

Just science topics; volcanoes

Mount Vesuvius and some basic science

Giving your opinion about a topic

Different Science topics

Asking science questions

More for younger kids and getting them interested in Science and nature

Communication

Finding out what is going on today in science

Don't know -- not really looking. new news in science

Science in the news

News stories about science -- current science issues happening in the world

Scientific topics.

I don't know. It looks like you are gathering opinions.

Current events, communication, media, opinions

Science. Lots of science.

Science ideas. Talking and sharing on internet.

Feedback. Get people to talk about science

Not sure. Answering questions.

Different stuff you can share your opinions about.

Different science topics.

Information about what the Museum is doing, what's on the web.

Poll-answer questions.

Different people writing science stories.

Current facts. Questions for general awareness.

Current aspects of science.

Science stuff, new ideas.

It had a special object of the month and it was about a gentleman that interprets writings.

Whether or not you want to be a journalist, I thought the Pompeii stuff was interesting.

About buzzing around different topics.

Interacting with computers.

Obviously science. What's going on today in science.

I thought about do you think you're smarter than a monkey. I thought there would be more info than just a p

Get kids interested in science, there are little teasers.

The latest things going on.

This is my first time here, getting my bearings. It's about asking questions & Pompeii right?

Interactivity, kids actually asking questions and getting answers.

Learning about science. Science and learning.

Answering questions for people about science.

I didn't get any real theme.

What people are thinking about science and what they're interested in.

Well, we looked at the panda bear and never got past the picture and wanted to put a note in. Read what oth

Looks to me that it's about current science topics.

I don't know, we couldn't get the computer to pull up articles. Why is registration required?

Interactivity - community and interacting.

Enjoyed the news and game show. Interactive types of things.

A place where people can ask questions and post responses.

No idea. Have never been over here and I'm a member.

Something new, everything new to you each month.

Get the people to think about science and communicate with each other.

I'm not really sure; I think about the graffiti.

This was about a simulated newscast and science in the news.

A variety of things -- natural sciences, history, ecosystem.

It's something for kids to do.

It's a pretty dumb survey and graffiti at Pompeii.

Not really sure; it looked like the newscast and the local news.

Perceptions of the Intro Area (continued)***What did you find out that was surprising or interesting to you?***

13%	how a news teleprompter works, how fast it goes
11%	seeing the object of the month
7%	about volcanoes, Pompeii graffiti
7%	poll results
7%	you can make your own labels
4%	giving your opinion, asking questions, getting feedback
2%	kids enjoyed, got involved
7%	other specific content
11%	other general answer
37%	nothing, don't know, didn't do much, didn't pay attention

List of comments

Read about geothermal power

It's all very interesting

The technology and the teleprompters.

This gets kids interested by using things and making labels.

It reminds me of the "Time for Kids" where they can weigh in and get feedback.

How fast the prompter runs

Wanted to see the teleprompter in relation to where my son's eyes were - is that how it is in real life?

Learned about volcanoes

Hadn't seen anything like that before - where people gave their opinion

The poll - more responded in favor of plastic on food -- surprisingly!

The lizard tracks were interesting -- that's all we saw.

That you could make your own labels

On air was kind of cool. We found that she couldn't read fast enough

Never knew Arctic people wore goggles, they're made of shells. I learned about the film you put on food to make it last longer.

I thought the teleprompter was going to be in a different area. I'd never seen one.

It was the same as last time.

I've never seen the snow goggles before. They are interesting

The graph said what I expected it to say.

I liked the object of the month, it was kind of cute. I like interactive things for the kids.

It was kind of fun seeing yourself on the news.

Pompeii, the words on the wall and the graffiti was interesting.

That my son is smarter than a monkey.

Nothing, really. Didn't realize the computer was an opinion thing, thought it was a quiz.

The fact that there was such a narrow slit and you could focus far away and see through it.

I thought it was cool to see how the teleprompter worked and the snow goggles; that was interesting to me.

I was surprised that there was no test to see if you're smarter than a chimpanzee.

The whole exhibit is new.

The goggles were pretty cool.

Perceptions of the Intro Area (continued)

OVERVIEW: Most visitors agreed that this exhibit is ‘fun for all ages.’ About half agreed it ‘shows science research that is recent or happening now.’ Most (69%) judged that the information in this exhibit was recent, within the past year. Few people felt that the current topics (e.g., volcanoes, snow goggles) were relevant to their lives.⁹ One-third of the visitors said there was too much reading.

Your opinion of this exhibit:

	<u>Definitely</u>	<u>A Little</u>	<u>Not really</u>
fun for all ages	70%	28%	2%
research that is recent/happening now	54%	26%	20%
too much reading	33%	10%	57%
topics relevant to my life	16%	41%	43%

Who said it’s definitely ‘research that is recent’?

- ** 67% of people who did NOT stop at Object of the Month
- 39% of people who looked at the Object of the Month (collections-based)

Who said it’s ‘too much reading’

- ++ 60% of those who stopped at Scientist on the Spot
- 33% of those who did not stop here

How recent or old is the information in this Science Buzz area?

within 6 months	38%	} 69% <u>Compared with previous studies:</u> 76% (CS Prototypes, 2002) 67% (Low-Carb Craze, 2004)
6-12 months ago	31%	
1-4 years ago	19%	
at least 5 years ago	12%	

⁹ It may be that the topics presented in the Intro Area at the time of this study did not seem as relevant to people as content in other Science Buzz exhibits (Mosquito Kiosk, Quiz Show) that more people identified as ‘connecting to everyday life’ in the exit surveys (see page 32).

F. Mini-Study: Use and perceptions of the Malaria Kiosk

This 3-sided kiosk had three activities: a computer displaying the Buzz website, a phone where you can listen to a scientist describing their research on malaria, and a microscope where you could look at mosquitoes in different life cycle stages. This study consisted of interviews with 61 visitor groups who had stopped for at least 10 seconds at one or more sides of this kiosk.

Some highlights of the findings are:

- The interactive microscope activity attracted most of the visitors who stopped at this kiosk (88%). Only 12% used the computer and 15% used the phone. The vast majority of people stopped at one side and then left. However, two-thirds of the visitors spent at least two minutes at the kiosk, indicating that they were clearly engaged with the activity.
- Visitors' perceptions of interpretive messages differed depending upon which activity they did – people who looked at the microscope thought the exhibit was about mosquitoes, while people who used the computer thought it was about malaria (10% perceived both themes).
- Two-thirds of the kiosk users agreed that this exhibit definitely shows 'research that is recent or happening now,' and half thought the topic was relevant to their lives. Most computer users believed that the information in the exhibit was recent (within the past year), but most microscope users thought it was not so recent (microscopes and mosquitoes are not perceived as recent developments).

F.1. Patterns of use of the kiosk

OVERVIEW: The vast majority of the visitors who were observed at the Malaria Kiosk had stopped to look at the mosquitoes under the microscope, and only 13% of the users did more than one activity (e.g., people are not using all three sides of the kiosk). About 12% stopped to use the computer (mostly women with children), and 15% stopped at the phone for more than 10 seconds. Women and families were less likely than men to use the microscope. More than half of the visitors said they had read something at the kiosk (flip-book next to the microscope, info or comments on the computer). The most popular activity on the computer was taking pictures and e-mailing them. The majority of groups (67%) spent at least two minutes at the kiosk, slightly longer for computer users compared to microscope users (data presented on the next page).

What did visitors do at the kiosk?

<u>microscope</u>	88%
read flip book	9
<u>computer</u>	12% ➡
explored beyond first page	13 of 25
took a photo	10
sent a photo	9
read comments	6
wrote a comment	0
<u>phone</u>	15%
read anything	59%
stopped at more than one side	13% (primarily microscope + phone)

After 41 “naturalistic observations” only 12% of kiosk users had stopped at the computer. Data collection then focused only on computer users, until there were enough for analysis (n=25, comprising 41% of the final sample).

Who used the microscope?

** 71% were adult-only users
 29% were adults with children

** 63% were men
 37% were women

Who used the computer?

** 60% were adults with children
 40% were adult-only groups

40% were men
 60% were women

Time spent at the kiosk

	Overall <u>Sample</u> (n=61)	Computer <u>Users</u> (n=22)	Microscope <u>Users</u> (n=30)
under 2 minutes	33%	32%	37%
2-3½ minutes	36%	23%	40%
4 minutes or more	31%	45%	++ 23%
median time spent (minutes)	2:30 min	3:20	2:25

Who spent at least 3 minutes?

** 65% of women
31% of men

F.2. Overall perceptions of interpretive messages

OVERVIEW: Visitors’ perceptions of the messages at the Malaria Kiosk differed depending on which activity they did. People who stopped at the microscope understood that the point of the exhibit was to learn about mosquitoes and their life cycle, but few of them mentioned malaria. Computer users, on the other hand, got the message about malaria, but few mentioned mosquitoes. One-fifth of computer users had no idea what the point of the exhibit was because they just took pictures.

What’s the main point of the exhibit?

<u>Computer</u>	<u>Microscope</u>	<u>Overall</u>	
12%	8%	10%	mentioned both malaria and mosquitoes
56%	11%	31%	learn about malaria
4%	42%	26%	learn about mosquitoes
8%	24%	16%	specific content about mosquitoes, life cycle
0	13%	8%	see mosquitoes up close
8%	5%	7%	other
20%	5%	10%	don’t know, blank

Sample of answers: microscope users

- Give an idea of how mosquitoes work.*
- I don't know. I didn't look at much. It's about mosquitoes?*
- Tell about how mosquitoes reproduce and how they work and about malaria.*
- I have no idea; looking at things up close; preventing disease.*
- Teach about mosquitoes and how they interact with human body.*
- To show a mosquito and its parts.*
- The phases of the mosquito life cycle.*
- Describe what a mosquito really is and does.*
- To show how a mosquito develops.*
- How a mosquito develops and drinks blood.*
- Life of a skeeter.*
- How mosquitoes bite, basically.*
- Mosquitoes and how they pass malaria.*
- I really didn't look at it. I noticed the bugs there.*
- Shows the kids how to use a microscope.*

What's the main point? (continued)

Sample of answers: computer users

You can share ideas with your friends on line

Seems to show recent health news and developments

I didn't read it, I helped my daughter.

Information on malaria and where it's at in the world today.

(looks at scroll above computer) Oh, malaria? We were just taking pictures.

Helped the boys take photos. I don't know what else it's about. Mentioned malaria when we sent photos. Is t

Cause and impact of malaria

Tell about how malaria is a problem

Malaria, mosquitoes, blood-borne illness

Malaria, just how you can get it and how to prevent it.

Learn about mosquitoes.

I don't know. I just took pictures.

Malaria is still a problem for some.

Perceptions of interpretive messages (continued)

OVERVIEW: Another question about the content of this exhibit showed similar results, with microscope users getting some information about mosquitoes and computer users getting some information about malaria. However, most computer users and about 40% of microscope users couldn't think of anything surprising or interesting that they had found out from using this exhibit.

What did you find out here that's surprising or interesting to you?

<u>Computer</u>	<u>Microscope</u>	<u>Overall</u>	
0	18%	11%	interesting to see mosquitoes up close
0	24%	15%	specific info about mosquitoes
20%	11%	16%	specific info about malaria, # of deaths
16%	5%	9%	other
64%	42%	49%	nothing, blank

Sample of answers: microscope users

- It was neat seeing the critters up close. That was interesting.*
- That the mosquito mouth is really six parts.*
- How fast a mosquito egg hatches.*
- Interesting to see how they look up close and to see how they hatch and how they form.*
- I really liked the microscope; easy and interesting.*
- I million, 200 thousand mosquitoes it would take to drain you.*
- They (mosquitoes) are ugly through their whole life cycle.*
- I liked that kids could play with the microscope.*
- How small the head of a mosquito is.*
- The scented soaps and people who sweat more can attract more mosquitoes.*
- That a mosquito saws open your skin. Blood isn't their main food.*
- How short their life is.*
- Never knew they pollinated plants, like bees do.*
- They actually live off plants instead of just blood.*
- Kills more people as a single factor than any other disease.*
- I learned that the larva live upside down and breathe through their tails.*

Sample of answers: computer users

- I don't know, we didn't find out; I knew a little about malaria.*
- I didn't know you could take pictures and send them to a friend*
- I have never seen a museum that shows current events.*
- That the drug they use to fight it is still so old and it's taken so long to get a vaccine. Malaria killed my gran*
- How malaria impacts the liver.*
- Not surprised that Africa has a malaria problem*
- Nothing, mostly he (kid) used it.*
- I didn't really look that close. I guess the note about how they protect people from malaria*
- Nothing - did it for my kids.*
- Read about study of bones and tuberculosis.*

Perceptions of interpretive messages (continued)

OVERVIEW: Overall, about half of the kiosk users felt that this exhibit had a theme similar to the other exhibits in the Health area. Microscope users were somewhat less likely to see it as having a similar theme (example: “it’s more about bugs than people”).

Does this exhibit feel like it has a similar theme or a different theme from the other exhibits in this area?

	Overall <u>Sample</u> (n=61)	Computer <u>Users</u> (n=22)	Microscope <u>Users</u> (n=30)
similar	49%	59%	++ 40%
different	36%	18%	50%
don’t know	15%	23%	10%

How is it similar?

- 13% about the body and how it works
- 11% blood-related
- 11% about health and disease, malaria
- 8% the type of activity: interactive, computer, magnifier
- 7% other
- 2% blank, don’t know

How is it different?

- 18% about mosquitoes, not humans
- 5% others are about body function, this one about a disease
- 3% less interesting, not as fun
- 10% other

Sample answers: how is it similar?

Deals with blood borne pathogens.

Deals with people and health problems.

Has to do with the body, different effects. That's it.

It's all biology related.

It's about blood and the body.

About a life cycle.

Hands-on, all hands-on, kids can do something.

They're all about the human body.

It relates to the general sense of body and health

Hands on like a lot of the other things around.

Malaria - doesn't it infect your blood and stuff like that?

It has to do with biology

Lots of blood-themed exhibits around it.

It uses a computer screen.

Sample answers: how is it different?

Somewhat different. It's more about bugs than it is people.

Everything else is about a bodily function. This is about a specific disease.

Not as much about humans.

Others are about the body, this one is about an outside entity acting on it.

This area is primarily a human thing.

This has no relation to the body that I can tell.

Not about people.

Still has to do with body, but it's different, not as interesting or fun.

I'm not sure; didn't seem to relate to the human body stuff.

I just glanced at it, other more interactive places to be.

It's on insects not the body

F.3. Perceptions of current science

OVERVIEW: Most kiosk users (67%) agreed that the exhibit shows ‘research that is recent or happening now.’ Many visitors (~50%) also agreed that this exhibit is ‘fun for the whole family,’ ‘relevant to my life,’ and ‘asks interesting questions.’ Very few people thought it had ‘too much reading’ or ‘needed to be more hands-on.’

How well do each of these statements describe this exhibit?

	<u>Definitely</u>	<u>A little</u>	<u>Not really</u>
Science research that’s recent or happening now	67%	12%	22%
Fun for the whole family	56%	26%	18%
A topic that’s relevant to my life	47%	25%	28%
Asks interesting questions	44%	16%	40%
Too much reading	11%	26%	63%
Needs to be more hands-on	5%	18%	77%

Who said it’s definitely ‘science research that’s recent’?

++ 79% of women
56% of men

Who said it’s definitely ‘fun for the whole family’?

** 76% of user groups that included children
42% of adult-only groups

Who said it’s definitely ‘a topic relevant to my life’?

No statistically significant differences

Who said it definitely ‘asks interesting questions’?

++ 59% of user groups that included children
33% of adult-only groups

Who said there is ‘too much reading’? (definitely or a little)

No statistically significant differences

Who said it ‘needs to be more hands-on’? (definitely or a little)

No statistically significant differences

Perceptions of current science (continued)

OVERVIEW: Computer users (61%) were more likely than microscope users (27%) to feel that the information in the exhibit was recent – less than one year old (contrast with 69% for the Intro Area). Perhaps visitors didn’t perceive the topic as “recent” because microscopes and mosquitoes have been around for a long time. . The vast majority of computer users (92%) did not realize they were looking at a website.

How recent or old is the information in this exhibit? – not the exhibit itself but the content

	Overall Sample	Computer Users	Microscope Users
within 6 months	15%		
6-12 months ago	20%	61%	** 27%
1-4 years ago	30%		
at least 5 years ago	20%	39%	73%
don’t know, can’t guess	16%		

[COMPUTER USERS] ***Did you realize that this is a website that can be accessed outside the museum or did you think it was a program that’s only on this computer?***

realized it is a website	8%
program on this computer	92%

G. Mini-Study: Website users (not at the museum)

This section of the report presents the results of an on-line survey of people using the Science Buzz website. The survey link (with an incentive) was posted on the website from December 20 through April 20, but the level of participation was low (only 127 people completed the survey out of thousands who used the website during this time). These results may not be representative (relatively small sample, self-selected). The findings are summarized here:

- About one-third of the website users said they have visited SMM (and 25% live in Minnesota).
- The website users are primarily children, teens and young adults (63% of respondents are under 30, but keep in mind that kids are probably more likely than adults to voluntarily do on-line surveys).
- Users gave a variety of reasons for their interest in the Science Buzz website, including a love of science, doing research on a specific topic, learning new things, and “it’s cool.”
- Most users had no complaints or suggestions for improvement (a few people dislike the pink graphics).

G.1. Website use among museum visitors

OVERVIEW: Some information was obtained about website use in the exit interviews with museum visitors. Overall, more than half of SMM visitors have used the SMM website, primarily to plan their visit or check on special exhibits and OMNI shows. Repeat visitors are more likely than first-time visitors to have visited the SMM website. Only 3% of visitors said they have looked at the Buzz section of the website.

	Overall Sample (n=446)		Recent ¹⁰ Visitors (n=206)	Infrequent Visitors (n=131)	1 st -time Visitors (n=103)
ever used SMM website	54%	**	64%	56%	31%
used website to plan a visit	47%	**	52%	52%	29%
used it for special exhibits/OMNI	34%	**	42%	34%	17%
used Science Buzz on website	3%		3%	4%	1%

¹⁰ Recent visitors are defined as those who have visited SMM within the past year. Infrequent visitors are those who last visited more than one year ago.

G.2. Who are the website users? (not at museum)

OVERVIEW: One-quarter of the Buzz website users live in Minnesota; most users live in other U.S. states, although there are some from other countries. Most users are young – 40% are children and teens and 23% are aged 18-30. About half of the respondents were visiting the website for the first-time; about one-quarter have used it four or more times. About one-third said they have visited the Science Museum of Minnesota. About half of the users are current students; most have no special training in science (only 12% have science careers). Additional analyses comparing first time website users with repeat users show that the repeat users are more likely to have visited SMM. Also, it looks like the website is attracting repeat visits among the 13-29 year olds.

		Overall (n=125)	Website Familiarity		
			<u>1st-time</u>	<u>2-3 times</u>	<u>4+</u>
<u>Familiarity with Buzz website:</u>					
	first-time	48%			
	2-3 times	26%			
	4+ times	26%			
<u>Experience with SMM:</u>					
	has visited the museum	36%	24%	42%	55%
	has never visited	64%	76%	58%	45%
<u>Age:</u>					
	under 13	21%	20%	18%	14%
	13-17	19%	15%	31%	32%
	18-30	23%	17%	24%	34%
	31-40	10%	}	}	}
	41-50	5%			
	51-60	8%			
	over 60	15%	25%	7%	13%
<u>Residence:</u>					
	Minnesota	25%			
	other U.S.	61%			
	other countries	14%			
<u>Education / Interest in science:</u>					
	currently in school	53%			
	career in science	12%			
	has studied science in college	23%			
	interest but no special training	47%			
	not really interested in science	12%			

G.3. Perceptions of the website

OVERVIEW: Users expressed interest in the Buzz website for a variety of reasons, including: a love of science, searching for information about specific topics, learning in general, the variety of topics and articles, keeping up with the latest science news, and “it’s cool.” Only 17 people offered suggestions to improve the website; a few people complained about the graphics (pink, cartoony), a few requested more games or activities for kids, and a few people suggested video of live events.

Why are you interested in the Science Buzz website?

11%	I love science
11%	specific topic: candy, preemies, woolly mammoth
10%	it’s cool
10%	learning
8%	variety of topics, interesting articles
8%	keep up with latest science news
8%	just found it, heard about it, curious
7%	answers to questions
7%	for school, doing research
7%	work-related, teaching
7%	specific features: polls, opinions, virtual dissection
5%	interest in how the website works, museum outreach
2%	other
11%	don’t know

Answers by category

I love science

I love science and I love the science museum, I first discovered the web site at Pompeii where you take a picture

This is my favorite subject

I love science

Science has always been of interest to me

Science

I am interested in science, always have been

Because I like science

Science is my favorite subject

I love nature

Because I am a nerd

I have always enjoyed science

I am a 16 year old boy interested in biochemistry and genetic science

That is all there is on the earth, if you think about it . . . everything you do is science

Perceptions of the website (continued)

Why are you interested in the Science Buzz website?

Specific topics

It's got chocolate

I typed in dissection and got this

Because I was a preemie

Latest pacemakers

Information about carrots

I like chocolate

I am interested in alternative energy sources

The article on Woolly Mammoth ivory brought me to the website

Wanted to read about the Woolly Mammoth tusks

To find organ donation information

The part about the flowers

Learning about Malaria

It's COOL

It's cool!

I think this is the best website I've found so far

It's cool

It popped up on a search, I love it, I'll put it on a 'must look at' list

It's so cool it's my home page

I love Science Buzz!

It's so cool

The first time I went on it I wanted to make an account right away, it looked so cool!

Because I heard it was fun

It's a very awesome website and my favorite website

Learning

I like learning about new things

For the science information

To learn more about science

You can learn a lot from it when you are really trying and interested in learning

It teaches me so much about science, history and political things

I seek wisdom that can only be gained through Science Buzz material or the cult-like political parties we so readily adore in America

There is a lot of information

Educational, new outlook

It is very educational in the field of science and technology

I would like to know more about the science in the world by viewing the internet

Information I didn't know about and which I learned more about

Learning

Perceptions of the website (continued)

Why are you interested in the Science Buzz website?

Variety of topics, interesting articles

It covers a wide range of interests

The Buzz provides a good collection of interesting science stories

It has interesting stuff

Great content

It has interesting topics in easy to read format

It gives a lot of information

Keep up with the latest science news

I like to keep up on science with little time and effort

I love keeping up on the latest science topics

Interested in science news

For the newest information

It is very interesting when I go on because they have different things every time

To read about the latest space news

Science Buzz rounds up some of the more interesting current science stories in one place

It has information about recent events and important news about some of the MN community

Just found it, heard about it, curious

A local coffee house presents Science Buzz lectures once a week

I was just gazing around and found Science Buzz and it caught my eye

Because it is new

Curious

I'm just curious what it is

I found in on a link from Google

I heard about you at Webwise!

I just went to the Science Museum for that camp in thing you do and they had a presentation on Science Buzz and I thought it would be a really cool website

I was searching the web for examples of museum exhibits

Answers to questions

It seeks the right answer

I am new to raising chickens and any questions that I have had I have found on this site or I have received excellent answers from you

Truth, seeking and disclosing truth

Because it had the information I needed

Because I'm wondering things and it answers my questions

Looking for information on organ donation

School

Research for papers

Candy research

I use it for school

I am a grade 8 student and I am getting A's because of this site

For study purposes

Because I am writing a report on tigers

As an agricultural science student it is important for me to understand what views are out there

Work

As a science educator I like to keep up on science news

Trying to help with our local Science Station efforts

I am a scientist

I am a Beekeeper in Minnesota

I'm going to show it at a talk tomorrow

I work at a museum

Specific features

I like to see and do the polls

We can voice our opinions

I like the other comments and the sound activities

That virtual dissection is fun!

I like the ability to comment and vote

I like to read how the public perceives some of the topics discussed

You can see the inside of a candy bar

How the website works

The approaches it uses to generate a user group

I'm interested in the blog – as museumsblog

I'm interested in how museums are using new technology to expand their web sites and create an "off-campus" experience for visitors

I develop museum experiences (both online and programmatic) for adults and I'm interested in science blogs for this reason

I want to create something like it

Perceptions of the website (continued)***Do you have any suggestions to help us improve the Science Buzz website?***

Maybe you should draw organs in virtual dissection a bit better

Categorize headlines by age or grade levels so as to ensure there's something for everyone

This site needs more un-science stuff, it's pretty boring because it's all sciency

Get rid of it

More educational games

Pose latest space news within days of discovery

Give me more information about the science buzz website from rural country

I really enjoy the website even though I think the graphics can be a bit too cartoony – I was initially turned off by them as they seemed very kid-oriented. The writing is interesting, especially JGordon who is hilarious. I wish that more of the posts pertain to local (Twin Cities) research and/or science related events and programs. Science Buzz should host happy hour science events.

I think you should almost be like a newspaper for science, where everyday you update people on the website on what science is going on today or something like that. It would be really cool!

Let younger children join too

The blog postings I looked at did not provide good information on the topics under which they were tagged. I think it might be easier for someone like me who can read at a higher level to access more "scientific" publications, since many of the postings just refer to an external website anyway. What about math? Engineering? Are there interesting videos about topics I can watch?

I think you should get rid of the pink on the web page and add some fascinating pictures on what is done in the process to make medicine from milk

List more of the exhibits and have some activities that kids can do

Get a real news station, current and live events specifically on science, it is everything!

The site is busy-looking and I find it hard to navigate and to look at for more than a couple of minutes. I wonder if adding in white space would improve the layout? Also, I find the pink color hard on my eyes – maybe find a more pleasing color scheme. Instead of putting recent comments on the sidebar, maybe put the past dates of blog entries like other blogs do, or put links to where you can look at posts by topic. I like the idea of Scientists on the Spot and allowing people to share their stories.

Videos

Give out more information on migration

You've done a fine, creative job already

Keep putting interesting and quirky items on it

No, I think it is great the way it is

It rocks

No, but thanks for asking

No, I found it very easy to use and navigate

No, just keep posting information that may be of interest to the people

H. Characteristics of the Samples

This section summarizes the demographic and other characteristics of the visitors who were interviewed at the museum for the various studies and methods presented in this report: two forms of Exit Interviews, Malaria Kiosk users, and Intro area users. The samples are mostly similar, and seem to be fairly representative of SMM general visitors.

Characteristics of the samples

OVERVIEW: The samples for the various methods are pretty similar: about three-quarters were repeat visitors to the museum and a similar proportion live in Minnesota. Most of the groups included children (52-62%), and there were more women interviewed than men (63%) except for the Malaria Kiosk Study. Nearly one in four visitors said they had a science-related career.

	<u>Exit</u> <u>Form A</u> (n=250)	<u>Exit</u> <u>Form B</u> (n=196)	<u>Malaria</u> <u>Kiosk</u> (n=61)	<u>Intro</u> <u>Area</u> (n=76)
<u>Experience with SMM:</u>				
repeat, within the past year	45%	50%	47%	38%
repeat, more than 1 year ago	31%	28%	33%	52%
first-time visitor	24%	22%	20%	10%
<u>Residence:</u>				
St. Paul	10%	9%	n/a	n/a
Minneapolis	4%	10%		
other MN	60%	55%		
out-of-state	26%	26%		
<u>Group composition:</u>				
adults-only	38%	48%	39%	32%
family with children	62%	52%	56%	62%
<u>Group size:</u>				
one	<1%	1%	3%	3%
two	36%	42%	27%	35%
three	23%	26%	19%	26%
four	21%	14%	20%	18%
five or more	20%	17%	31%	18%
<u>Gender of person interviewed:</u>				
man	37%	37%	52%	38%
woman	63%	63%	48%	62%
<u>Age:</u>				
18-24	10%	11%	10%	12%
25-34	17%	15%	21%	18%
35-44	26%	26%	34%	28%
45-54	25%	22%	18%	33%
55-64	13%	14%	12%	7%
65+	9%	12%	5%	1%

	<u>Exit Form A</u> (n=250)	<u>Exit Form B</u> (n=196)	<u>Malaria Kiosk</u> (n=61)	<u>Intro Area</u> (n=76)
<u>Education:</u>				
high school	10%	7%	13%	4%
some college	21%	22%	20%	20%
college graduate	40%	39%	51%	54%
graduate school	29%	32%	16%	22%
<u>Ethnicity:</u>				
American Indian	2%	1%	n/a	n/a
African American or black	<1%	1%		
Latino / Hispanic	1%	2%		
Asian American	2%	2%		
White	92%	94%		
other	3%	<1%		
<u>Training:</u>				
science career	24%	22%	n/a	n/a
some science training / classes	19%	25%		
interest in science / no training	47%	45%		
no interest in science	10%	8%		
<u>Month:</u>				
July	58%	48%		
August	42%	52%		
September			33%	
October			67%	
November				25%
December				54%
January				21%
<u>Day of week:</u>				
weekday	67%	76%	n/a	n/a
weekend	33%	24%		